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'TWAS THE DAY AFTER CHRISTMAS

'Twas the day after Christmas, and up at the Pole
St. Nick had returned from his gift giving role.
With spirits so merry and heart that was light
He thought of the presents he'd spread through the night.

"These doctors are clever," he chuckled with pride
As he counted the offices he'd been inside.
Why, during the wee hours he'd had to troop
To many a suite with a lens set or loupe.

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"I've been around and I surely can tell
That he's twice as wise who buys B & L."

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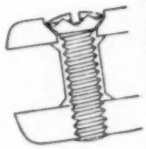

Cross section—Flex-Shu is easy to assemble; new lenses may be inserted as with any screw mounting. As the screw is drawn up, ends of shoe flex against lens in light spring tension—making a screw type rimless mounting that is wobble-free in both directions.

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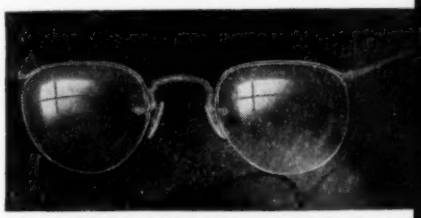

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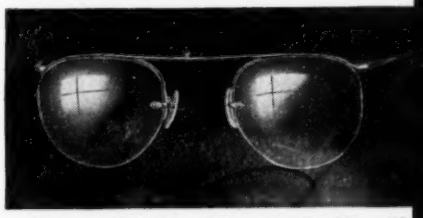

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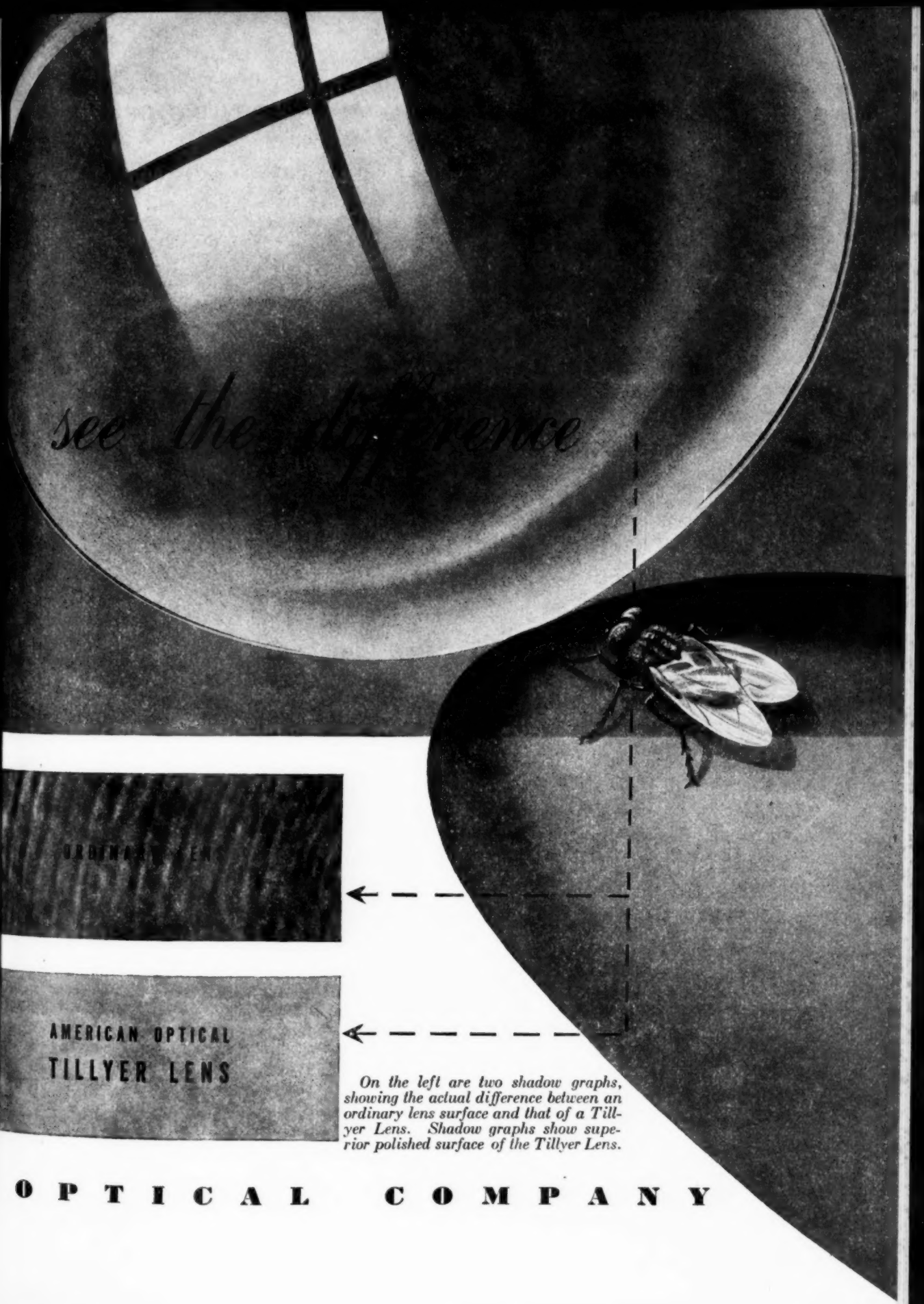

On the left are two shadow graphs, showing the actual difference between an ordinary lens surface and that of a Tillyer Lens. Shadow graphs show superior polished surface of the Tillyer Lens.

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AMERICAN JOURNAL OF OPTOMETRY

Vol. 17 DECEMBER, 1940 No. 12

A NEW CONTACT LENS FITTING CHART*

Henry J. Hoff, Opt.D.
New York, N. Y.

A deep-felt need for a simple, orderly method of recording our observations when fitting the Feinbloom Plastic Contact Lens is finally filled by our newly designed record chart. Every essential check test necessary to thoroughly safe and comfortable application of contact lenses is herein included. We believe that by adhering to this simple yet thorough routine of specific observation of the factors outlined in this chart, any case, except those where contact lenses are contra-indicated, can be brought to a fairly rapid successful conclusion.

The salient fault of any lens is brought to the immediate attention of the optometrist by mere inspection of the noted observations. After several contact lenses of various indicated sizes have been inserted in the patient's eye, and the findings recorded on the chart, it is possible to predict almost within .2 of a millimeter what the most comfortable lens will be. The trend toward the best-fitting size is unmistakably indicated by accurate successive observations.

In organizing the make-up of our chart, we provided for a logical succession of check tests after recording the size of the lens, i.e.:

Corneal Clearance

The most important factor and the one observed first is that of clearance of the cornea by the contact lens. This observation may be accomplished through any one of the three tests included. Each of the three tests provides definite reliable information and it is advisable that all be used at one time or another in the course of fitting.

(a) *Retinoscope Test:* This is the simplest of the three and is done at the first visit. The lens representing the closest approximation of the radius of curvature of the sclera is inserted with half-normal saline solu-

*Submitted for publication August 2, 1940.

DATE	SIZE OF LENS	CORNEAL CLEARANCE			SCLERAL CONTOUR				LAG		TIME OF INS.
		RET	DRY	FLUO	T	N	S	I	H	V	

Figure 1a. Contact Lens

tion. The optometrist then scopes the patient to measure the power of the correcting lens required to neutralize the motion of the fundus reflex. If the lens is resting on the cornea, the reflex will have a series of dark, thin, wavy lines (recorded as "—"). These are folds in the corneal epithelium caused by the pressure of the lens. If the contact lens clears the cornea, (recorded as "+") the neutralized reflex is free of any striae (except those already present in either the deeper layers of the cornea or the lenticular structure of the eye). As is evident, this test requires but a few seconds, especially on subsequent visits.

(b) *Dry Test*: This test may be made at the time of the second visit. The contact lens is thoroughly washed in cold water, dried and then inserted without saline solution. Two observations may be made, i.e., (b1) the optometrist can observe from the side and see the air gap, if any, between the cornea and the contact lens; (b2) the corneal section of the contact lens will fill completely with tears if the contact lens is too close to the cornea of the eye; or a large air bubble will remain in the corneal section, indicating sufficient clearance The smallest bubble permissible should be larger than 1/5 the area of the corneal section.

(c) *Fluorescein Test*: This test too may be done at a subsequent visit. The contact lens is half filled with saline solution and two drops of fluorescein solution are added. After insertion, the area covered by the fluorescein is colored green. This green color is especially emphasized when observed under cobalt blue illumination. Where the corneal section of the lens touches the cornea, the color is black or dark brown; and where there is clearance, the color is green. The cobalt blue illumination is supplied by simply holding a cobalt blue lens, which is present among the auxiliary lenses of any trial case, in front of a focusing flash light. It is advisable, for best results, to darken the room.

TIME OF REM.	CORNEAL CLEARANCE			SCLERAL CONTOUR				LAG		NEXT LENS	COMMENT: BURNING, HAZE, TEARING, ETC.
	RET	DRY	FLUO	T	N	S	I	H	V		

Fitting Chart (Continued) Fig. 1b.

Scleral Contour

After determining that the contact lens clears the cornea in any of the foregoing tests, the optometrist turns his attention to the fit of the scleral contour of the lens. Observations are made all around the outside edge of the lens to note whether the edge conforms accurately to the curve of the sclera (recorded G) or whether the edge stands away (recorded in the chart as L) or whether the edge binds tightly (recorded T).

The notations are then made in the record chart in the appropriate places, i.e.

T. = temporal side.
N. = nasal side.
S. = superior side.
I. = inferior side.

Thus a lens may fit tightly in the horizontal meridian and loosely in the vertical meridian. It would be recorded thus:

T	N	S	I
T	T	L	L

The logical step in choosing the next size lens would be to loosen the horizontal and tighten the vertical meridian of the lens. Then again observe whether the change made in the scleral radius of curvature of the contact lens was sufficient or insufficient, etc.

Lag

This observation may be made coincident with the previous determination (scleral contour). When the eye turns in, out, up or down, the lens should lag behind the motion of the eye. In other words, the

lens should *not* be fixed so tightly on the eyeball, that it does not slide about somewhat when the eye is in motion. The eyeball should slip about under the lens. To detect and estimate quantitatively this lag or slip, observe the area of the sclera exposed between the corneal-scleral joint of the lens and the edge of the iris of the eye, when the eye is turned in the four testing directions. The amount of lag necessary in a properly fitting lens varies from ½ to 1½ mm. Some cases require more and some less, depending on (1) how much lid pressure is present, (2) the contour of the eyeball in the limbus region.

Having estimated the lag, note the amount in millimeters or fractions thereof in the proper space. The horizontal motion being noted under "H" and the vertical motion under "V."

It is possible, too, to get a very accurate estimate of the fit of the scleral contour from the observation of the lag. The tighter the edge fits, the more the lag; and conversely, the looser the edge fits, the less the lag. In some cases, the palpebral aperture is so small that it is all but impossible to get a good view of the contour edge. In those cases, we must depend on the information elicited in the lag observation.

Time of Insertion

After making all the foregoing observations, we note the time of day in the next column. Incidentally, after a short period of practice, the time consumed in the foregoing tests should not exceed 1½ minutes.

Time of Removal

Before removing the contact lens after it has been worn for ½ to 4½ hours, we first note the hour of removal and then proceed to recheck each of the tests made immediately after the lens was inserted. That is, we observe again the corneal clearance, the scleral contour and the lag. In some cases we find a change has taken place.

Corneal Clearance (Before Removal)

(a) *Retinoscope*: If the reflex was clear and unlined at the time of insertion (+), (1) it may now exhibit the dark wavy lines seen when the contact lens touches or is too close to the cornea (—); (2) the saline solution may have become cloudy, with fragments of mucous floating about; (3) the cornea may have a hazy appearance.

(b) *Dry Test* (On Removal)

The corneal section may now be either completely filled or exhibit a very "thin" small bubble (—), after having originally a large bubble or air gap (+).

(c) *Fluorescein Test* (On Removal)

The cobalt blue light may now uncover a small brownish spot at the apex of the cornea or a dark crescent around the corneal-scleral joint as the eye moves in any of the four test directions (—), after having originally been completely green or yellowish green (+).

The reason for any of the foregoing changes in the corneal clearance would be that the lens, due to pressure of the lids, had receded inward upon the eyeball. The patient, upon the occurrence of this phenomenon will complain of a burning sensation. It is therefore advisable to recheck for corneal clearance every half hour with any previously untried size, even though no complaint is made by the patient.

To correct this improper positioning of the contact lens in the eye, either of two methods may be used: (1) Shorten scleral radii—that is, make lens tighter at the contour edge. For instance: if you have been using a spherical contact lens of scleral radius 36 T 36 (13.6 mm. radius horizontal, 8.5 mm. radius corneal section, 13.6 radius vertical, we drop the 1 from 13.6 for convenience. The letter "T" stands for 8.5 mm. corneal radius), and after 1½ hours of wearing, the patient complains of a burning sensation, you may, after noting the lack of corneal clearance, shorten the scleral radius to 34. Now it may happen that the contour edge is too tight with the shorter scleral radius. The blood vessels are constricted at the edge and the patient may complain of a pressure sensation. (2) In that case, go back to the 36 scleral radius, but shorten the corneal radius. In other words, try a lens of the original scleral radius, but a deeper corneal section. This size would be 36 U 36 (where the letter "U" stands for a 7.5 mm. corneal radius).

Scleral Contour

Where the contour edge had appeared to fit well on insertion (G), or even slightly loose (Ls), at the time of removal it may appear either unchanged or tight (T). The reason for the change, if the edge now seems to press upon the sclera is, (1) the lid pressure plus (2) a swelling of the bulbar conjunctiva which has been irritated. Thus a contour edge which, on first inspection was standing away from the sclera may, at the time of removal, appear to be "digging in." This condition, if there are no other contributory factors, may be remedied by using a longer radius of curvature in the next lens tried. Incidentally, any "digging" appearance will be accompanied by a white blanched line along

the pressure area and a constriction of the blood vessels passing under the edge of the lens.

Lag (On Removal)

A seemingly normal lag at insertion may have either remained unchanged or been slightly reduced if the lens fits properly. If, on the other hand, the conjunctival swelling (discussed above) has taken place, there will be little or no clearance in the limbus area and the lag will be reduced to zero. This phenomenon will bring forth a subjective report of a burning sensation from the patient. After removal, immediate inspection of the limbus area will reveal a shelf-like indentation which quickly disappears.

To correct the condition of lack of lag, the remedy is to shorten the scleral radius. If the lens used were a spherical contour, 36 T 36, try a 34 T 34 or a 32 T 32 at the next visit. If the lens used were a toric contour of 30 T 34, try a 28 T 32 or a 28 T 34 or a 30 T 32 at the next visit.

Next Lens

The notation in this column will depend on the findings in the previous tests. Thus, if the corneal clearance is nil (—), measures to correct it are taken by either shortening the scleral radius or the inside corneal radius or both. If the scleral contour is too loose (edges stand away) and the lag is too little, shorten the scleral radius. If the contour edge is too tight and the lag too great (over 2 mm.) lengthen the scleral radius. In deciding on how much to shorten or lengthen the scleral radii, the optometrist's judgment will improve with practice. As a rule, when beginning this work, try to go to extremes when making a change. Thus if a 36 T 36 is too loose, try a 28 T 28. This may be too tight and so you would try a 32 T 32. After some experience, it will be possible to estimate that a lens requires changing by the small amount of two-tenths of a millimeter.

Comment

It is important to record any sensation of burning, tearing, scratching, halo, blur, catching or pressure voiced by the patient. A great deal may be learned about improving the fit of a lens by simply analyzing and correcting the conditions causing the patient's complaint.

DR. HENRY J. HOFF,
441 WEST END AVENUE,
NEW YORK, N. Y.

AN EMPIRICAL METHOD OF DETERMINING THE VERTICAL PRISMATIC EFFECT AT THE READING CENTER OF A LENS*

J. Claire Kehoe and G. A. Fry
School of Optometry
Ohio State University
Columbus, Ohio

In recent years the importance of the vertical prismatic effect at the reading center of a spectacle lens has become generally recognized. The reading center of a lens represents the point on the front surface through which the line of sight must pass when directed toward the center of a printed page, when the head and printed page are held in the same position as during the process of reading. It is obvious to start with that every individual may use numerous positions of his head and printed matter while reading. The type of chair, the illumination, the use of a table in conjunction with a chair, all affect the position in which the head and print are held. It is necessary therefore to select some point which is most representative of the various points through which the line of sight is made to pass in the process of reading.

In designing a pair of glasses with compensation for vertical imbalance at the reading level,[1,2,3] it has been customary to select as the reading center a point which lies 8-12 mm. below the distance center and displaced inward 2 mm. The distance center which is used in designing a lens, is supposed to represent the point through which the line of sight must pass when in its straight forward position, but often dispensers and optometrists fail to adjust the glasses so that the straight forward position of the line of sight passes through this point. Hence, in attempting to evaluate the effects produced by wearing lenses it is far more satisfactory to determine experimentally the point used for a reading center, than to calculate one from the data used in designing the lens.

*Submitted for publication June 11, 1940.

A device has been described in a previous paper which may be used for obtaining a photographic analysis of the position of a pair of glasses on the face.[4] Front and side views of each eye are simultaneously obtained in orthographic projection as shown in Fig. 1.

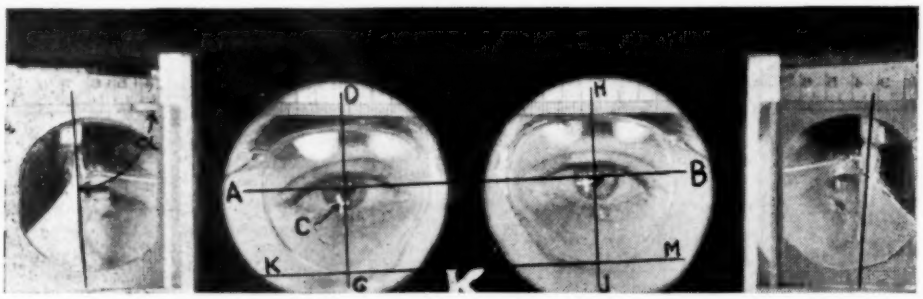

Fig. 1. Front and side views of the lens before each eye, used in analyzing the position of a pair of spectacles.

In order to determine the level of the reading center, the first step is to construct a full size profile drawing of the eye and lens from the data obtained from the photograph illustrated in Fig. 1. In the side view of each eye a line is drawn through the top and bottom edge of the front surface of the lens. The angle which this line makes with the bottom edge of the scale can be measured with a protractor. The horizontal distance from this line to the vertex of the cornea can be measured with a pair of dividers used in conjunction with the scale.

A line can then be drawn on a piece of paper to represent the straight forward position of the line of sight, and a full size schematic eye drawn in with the center of rotation located on the line of sight 13 mm. from the cornea as shown in Fig. 2. The line connecting the top and bottom edge of the lens can be drawn in since its distance from the vertex of the cornea can be measured and the angle which it makes with the horizontal plane is the same as the angle which it makes with the bottom edge of the scale in Fig. 1. The top and bottom edges of the lens are at the same distances above and below the line of sight in the drawing as they are above and below the line connecting the centers of the pupils in the front views of the photograph. The curvature in the vertical meridian of the front surface can be measured with a lens measure and then traced on the drawing with a gauge. This curve must pass through the top and bottom edge of the front surface.

The next step is to determine the depression of the line of sight while reading. This information may be obtained by photographing a side view of the patient while he is reading as shown in Fig. 3. Care must be exercised to get the camera on a line through the patient's eye which is perpendicular to the vertical plane passing through the center of the head and the center of the reading matter.

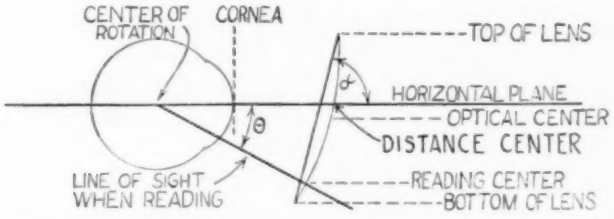

Fig. 2. Diagram of the eye and lens used in determining the position of the reading center.

A photograph obtained in this manner can be analyzed by drawing a line tangent to the chin and eyebrow. Perpendicular to this line a second one can be drawn which passes through the center of rotation of the eye. This represents the horizontal plane of the head and corresponds to the horizontal plane in Fig. 2. Another line can be drawn through the center of rotation and the center of the printed page. This line may be assumed to represent the position of the line of sight while reading; no allowance is made for the prismatic effect of the lens because the error involved is small in comparison with the reliability of getting a representative measure of the position in which the head and printed page are held while reading. The depression of the line of sight below its straight forward position can be measured with a protractor. The position of the line of sight while reading can then be represented on the drawing in Fig. 2. The intersection of this line with the front surface of the lens represents the level of the reading center.

In the case of a sphere whose optical center falls in the field of the lens, the optical center can be indicated on the front surface by a small cross in order to get it represented in the photograph in Fig. 1. A line is then drawn through the centers of the two pupils. The vertical displacement of the optical center below or above this line can be measured directly from the photograph. In order to make this measurement, a pair of dividers is set to correspond to the distance and then applied to the scale in the photograph. The distance of the reading center below the distance center can be measured in the diagram in Fig. 2. This distance

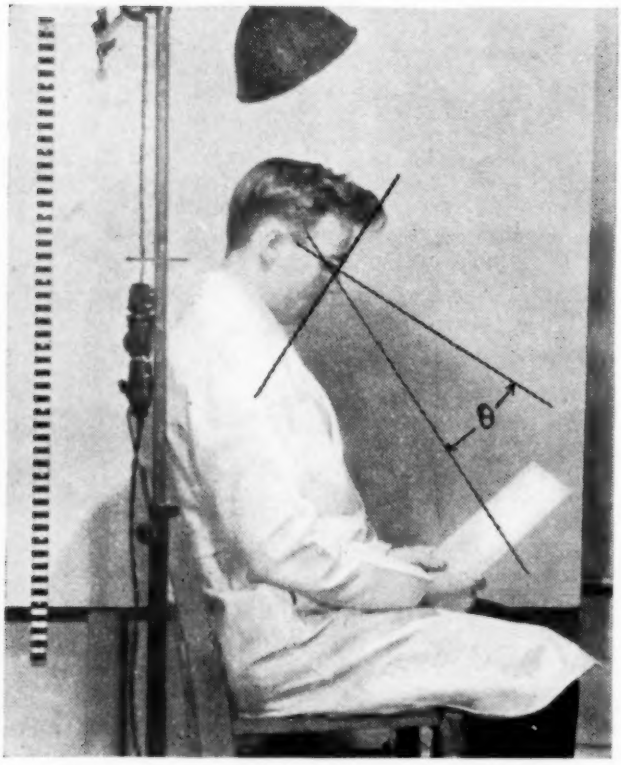

Fig. 3. Photograph used for determining the depression of the line of sight below the horizontal plane of the head while reading.

should be measured as the chord connecting the reading and distance centers and can be designated as the depth of the reading center.

The distance of the reading center below the level of the optical center can then be calculated, and the vertical prismatic effect can be computed by multiplying this distance in cm. by the power of the lens. If the lens is plus, the base is on the same side of the reading center as the optical center; and if minus, on the opposite side.

In the case of a cylinder whose axis falls within the field of the lens, the prismatic effect at the reading center can be determined as follows: It is assumed in the discussion that the lens is mounted before the right eye. A line connecting the two pupils (AB) can be drawn on the photograph (Fig. 1). Two lines (DG and HJ) are then drawn perpendicular to AB through the centers of the pupils. On the same photograph a line (KM) can be drawn tangent to the bottom edges of the

two lenses. These lines may be redrawn on a piece of paper in the same relative positions (Fig. 4). The distance from each pupil to the line KM can be measured by setting a pair of dividers on this distance in the photograph, and measuring the span on the millimeter scale. The meridian corresponding to the axis can be determined with a vertometer. Any point (C) on the axis can be marked on the lens before photographing, and this point can be located on the drawing. The cylindrical axis (EF) may be drawn through this point (C) on the sketch in such a manner that it makes an angle with the line (KM), corresponding to the degree notation of the cylindrical axis. The reading center is located at a distance below the pupil equal to the depth of the reading

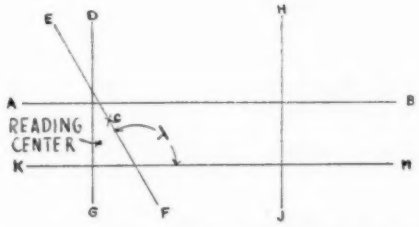

Fig. 4. Diagram used in determining the vertical prismatic effect at the reading center of a cylinder or sphero-cylinder mounted before the right eye. In the case of a cylinder the point (C) represents any point on the axis; in the case of a sphero-cylinder (C) represents the optical center.

center as measured in Fig. 2. It is also displaced inward two millimeters. The perpendicular distance from the axis (EF) to this point in cms. when multiplied by the dioptric power of the cylinder will give the total prismatic effect at the reading center. This value can then be resolved into a horizontal and a vertical component. The vertical prismatic effect can be computed from the following formula:

$$\left\{\begin{array}{c}\text{Vertical}\\ \text{Prismatic}\\ \text{Effect}\end{array}\right\} = \left\{\begin{array}{c}\text{Total}\\ \text{Prismatic}\\ \text{Effect}\end{array}\right\} \left\{\begin{array}{c}\text{Cos. Angular Displace-}\\ \text{ment of Cyl. Axis}\\ \text{from 180}\end{array}\right\}$$

A second method of determining the vertical prismatic effect at this point makes use of a graph such as represented in Fig. 4. The point is located on the graph corresponding to the position of the cylinder axis and the total prismatic effect of the cylinder, and the power of the vertical component is read from the scale on the left hand side. The direction of the base of the vertical component of the prism effect has to be determined after considering whether the cylinder is plus or minus and whether the reading center falls above or below the cylinder axis. When

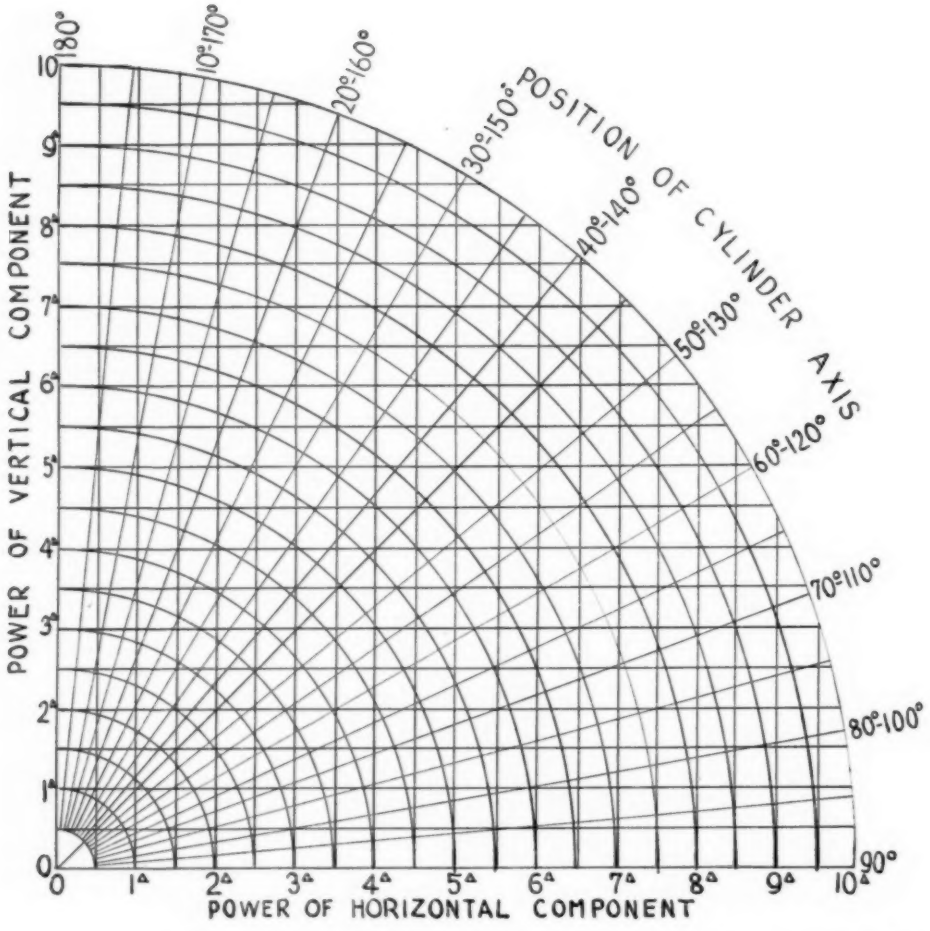

Fig. 5. Chart for determining the vertical prismatic effect of a cylinder at the reading center.

the cylinder is plus the base falls on the same side of the reading center as the axis, and when the cylinder is minus, the base falls on the opposite side.

In the case of a cylinder with the axis at 90 the vertical prismatic effect at the reading center is always zero, and hence no calculation is necessary.

Whenever a sphero-cylinder is encountered whose cylinder axis falls at 180, it simplifies the procedure to transpose it so that the cylinder axis falls at 90, because the vertical prismatic effect of the cylinder component

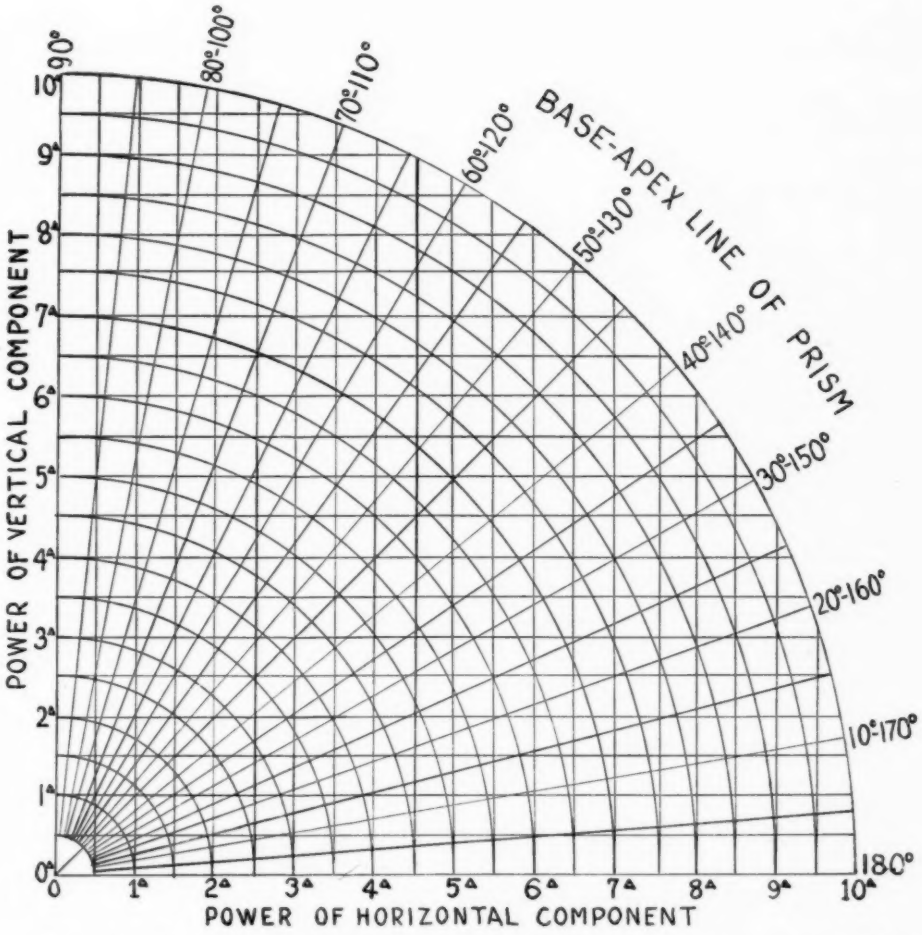

Fig. 6. Chart for determining the vertical prismatic effect of a prism at the reading center.

becomes zero when this is done, and the effect due to the sphere component is all that needs to be computed.

Whenever a sphero-cylinder is encountered which comes out to be a simple cylinder when transposed, the simple cylinder form should be used when computing the vertical prismatic effect.

In the case of a sphero-cylinder whose optical center falls within the field of the lens, the following procedure may be applied. A point (C) is marked on the lens before making the photograph to represent the optical center. The lines AB, KM and EF described above can be drawn on a piece of paper in the same way as in the case of a simple

cylinder. The prismatic effect of the spherical component is computed by multiplying the distance from the optical center to the level of the reading point in cm. by the dioptric power of the sphere. The vertical component of the total prismatic effect due to the cylinder may be determined by either of the two procedures described in the case of a simple cylinder. The sum of the two represents the total vertical prismatic effect at the reading center.

In the case of a lens incorporating enough prism so that the optical center (or the axis in the case of a simple cylinder) does not fall within the field of the lens, the geometrical center can be indicated on the lens before photographing and the vertical prismatic effect can be measured at this point. The total lens is then analyzed into spherical, cylindrical, and prism components. The power of the prism component is equal to the total prismatic effect at the geometrical center. The power of the prism element is the same at the reading center as at the geometrical center. The vertical prismatic effects of the prism component must be computed unless the base apex line is vertical. This can be computed in accordance with the following formula:

$$\left\{\begin{matrix}\text{Vertical}\\ \text{Prismatic}\\ \text{Effect}\end{matrix}\right\} = \left\{\begin{matrix}\text{Total}\\ \text{Prismatic}\\ \text{Effect}\end{matrix}\right\} \text{Cos.} \left\{\begin{matrix}\text{Angular displacement of}\\ \text{the base apex line from}\\ \text{the vertical}\end{matrix}\right\}$$

This may be determined also by means of the graph in Fig. 5. The point is located which represents the total power of the prism and base-apex line and the vertical prismatic effect is read from the scale on the left. The base of the vertical component is up, when the base of the total prism is up, and down, when the base of the total prism is down. The prismatic effects of the spherical and cylindrical elements can be determined by treating the mechanical center as an optical center and proceeding as described in the case of a sphero-cylinder. The sum of the vertical prismatic effects due to the cylinder, sphere, and prism components represents the total vertical prismatic effect at the reading center.

In the case of a bifocal in which the optical center of the segment corresponds to the mechanical center of the segment, the vertical prismatic effect of the segment at the reading center can be calculated by multiplying the distance in cm. of its optical center above or below the level of the reading center by the dioptric power of the segment. This can be done by marking the optical center before the photograph is taken and then locating a point on the front surface in the profile

drawing in Fig. 2 representing the level of the optical center. The vertical prismatic effect of the bifocal segment can be added to that of the distance lens.

In the case of a prismatic bifocal segment, the vertical prismatic effect at the reading center can be computed if the prismatic power of the segment is known. If this value is not known, a point representing the reading center as determined above can be marked on the lens, and the prismatic effect at this point can be measured directly with a vertometer. The vertical component can then be calculated. The same procedure can also be used with any of the various types of lenses described above, but the measurement with the vertometer cannot be made until after the photograph is developed and analyzed.

Appreciation is expressed to the Univis Lens Company for a Fellowship, which has made possible the senior author's contribution in the work described above.

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A PRELIMINARY STUDY OF THE EFFECTS OF RESTRICTED BANDS OF VISIBLE RADIATION ON THE PHYSIOLOGICAL FUNCTIONS OF HUMAN SUBJECTS*

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Berkeley, California

Recently in the field of Optometry interest has arisen in the physiological effects of restricted bands of visible radiation when such radiation is incident upon the eyes. It has been recognized for many years that certain bands have therapeutic value, particularly those which lie in the region of the infra-red and the ultra-violet. The physiologic action of these regions is well known. The physiological effects of visible radiations particularly on the human organism, except insofar as they concern vision, are less clear and the literature on this subject is quite equivocal and contradictory. The extensive literature concerning the effects of visible radiations in modifying the physiological activity of plants and lower animals establishes with reasonable certainty that differences in function exist, and that these differences are concomitants of the *amount* of light rather than of its quality.

For some time it has appeared desirable to the writers to obtain controlled experimental data upon any physiological changes which might occur in the human organism when various colored radiations were observed by the eyes. The purpose of this communication is to present the preliminary results of such an investigation.

In an investigation of this nature it is desirable to control the variable factors not under consideration and to measure simultaneously as many physiological functions as is possible. In selecting such mensurable functions an attempt was made to select those processes which would most readily demonstrate dynamic change. With the foregoing in mind, the authors selected the following: respiratory rate and respiratory

*Submitted for publication October 11, 1940.

volume, pulse rate, systolic and diastolic blood pressure, electrical skin resistance or the so-called psycho-galvanic reflex, and the blood-sugar concentration.

In the experimental set-up all of these functions with the exception of skin resistance, blood-pressure, and blood sugar were automatically and continuously recorded on polygraph tape. The skin resistance and blood pressure were measured at three minute intervals; samples of finger blood were taken at the end of each irradiation with a given band.

The subjects were five males and four females—normal, healthy, college students. They were measured under basal conditions identical with those in current use for measuring the basal metabolic rate. The subject presented himself in the morning before having breakfast. He then rested on a cot for one-half hour during which period his respiratory rate and volume, skin resistance, pulse rate, blood pressure and blood sugar were recorded. A test run of twenty minutes then followed with the eyes irradiated with diffuse white light with an illumination of 10-foot candles at the eyes. During this period all the selected physiological functions were measured.

This exposure to visible light was followed by an exposure of identical intensity and duration, to one of the colored lights,—*red, green, blue.* The illuminations were measured by a Weston illuminometer, the photronic cell of which has a spectral sensitivity almost identical with that of the light adapted human eye.

A few measurements were made at high illuminations to observe any possible changes due to change in intensity of the stimulus.

The irradiator consisted of a tungsten incandescent bulb housed in an asbestos lined wooden box. Just in front of this bulb were placed the various filters to obtain the necessary wavelength bands. These filters were the pyrex Projection Blue, Red and Green filters made by the Corning Glass Works. The thickness of each filter was 4 mm. The spectral transmission curves for these filters may be obtained from any Corning Glass Works catalogue. In addition to these filters, a filter made from the Corning heat absorbing glass was used to eliminate most of the infra-red. About 8 inches in front of these filters was placed an opal glass screen to diffuse the light in order to obtain a uniformly illuminated field for observation. This whole combination was housed in a wooden case and mounted on a heavy tripod so that

it could be oriented in any manner desirable. The illumination was controlled by a rheostat in series with the light source.

In use, the irradiator was placed vertically just above the eyes of the subject who was lying on the cot. The opal glass diffusing screen was placed about four inches above the subject's eyes to eliminate any innervation to accommodation or convergence. Observation of surrounding objects was restricted by small extensions on the sides of the irradiator box.

No detailed description of the measurement of the various physiological functions will be given here. They were performed according to standard physiological procedure.

The results were essentially negative. For a given intensity of irradiation no significant unidirectional change in any of the above enumerated physiological functions was obtained when the color of the irradiating light was changed. In two subjects a rise in systolic blood pressure of 3% was observed when red light was used. This is less than the error of measurement of the blood pressure and cannot be considered as significant. For the other functions no trend was observed.

When the intensity of the irradiating light was changed, slight changes in some of the physiological functions occurred which were very transitory and gradually returned to their original value as adaptation occurred. This would suggest a general, but temporary, physiological change during retinal adaptation.

It has been stated by various authors that marked physiological functional change occurs under irradiation with restricted wavelength bands. These changes can become, according to these authors, semipermanent and influence the psycho-physiological status of the individual. The results described above lend no support to this concept. In fact to the writers it seems that if any *direct* physiogolical change occurs with differential color irradiation it is a second order effect that is negligible, practically or clinically. Slight differential *intensity* effects that are quite temporary can be obtained,—these results are independent of color.

It is suggested here, on the basis of the above data, that the colored light may function as an attention-securing mechanism in psychotherapeutic measures in suggestible subjects, and apparently does not act in any direct physiological manner.

No attempt has been made to discuss exhaustively the entire field. The purpose of this paper is to acquaint the profession with the results of this preliminary investigation.

In conclusion we wish to thank Professor Nathan W. Shock of the Division of Physiology for his generosity in placing at the disposal of the writers his spirometer polygraph apparatus which made possible the automatic recordings of physiological functions.

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Current Comments by Carel C. Koch

A Monthly Department

in which the Editor of the AMERICAN JOURNAL OF OPTOMETRY will discuss items of news of general interest; such as relate to new instruments, clinical techniques, education, public health, and optometric legislative and organization problems.

AN INTRODUCTION TO THE AMERICAN JOURNAL OF OPTOMETRY

This is the season of the year when an editor has the problem of saying Merry Christmas and Happy New Year to his readers and doing it if possible, without sounding like a maudlin greeting card. It is also the season when many old subscribers decide to add, a twelve month subscription for the AMERICAN JOURNAL OF OPTOMETRY, to some optometric friend or associate's Yuletide presents and blessings.*

Each year many of our old friends create new ones for us in this way. Of the thousands of optometrists who will soon be celebrating this Christmas Season, a group roughly equivalent to the professional registration in North Dakota, will this week open their own copies of the AMERICAN JOURNAL OF OPTOMETRY for the first time.

It is to these new readers of this magazine that these paragraphs are directed. Of course they will have seen the AMERICAN JOURNAL OF OPTOMETRY before and in general will have read articles or occasional issues. But that is not like living intimately with the AMERICAN JOURNAL OF OPTOMETRY for an entire twelve month period. These new readers will ask, "What is this strange new publication and how much am I to expect from it?" This question will occur to a number of readers this month and since this is a first impression, when many of these optometrists will decide whether or not they are happy to give the stranger desk space in their refracting rooms, it is important that it be answered.

Briefly, the AMERICAN JOURNAL OF OPTOMETRY is a magazine of refraction. The major thesis of the AMERICAN JOURNAL OF OPTOMETRY's philosophy is the recognition of the fact that the neurological and refractive problems of vision constitute an important factor in the health problems of America. Recognizing this, the AMERICAN JOURNAL

*Christmas Gift Subscriptions are entered for 13 issues, starting with December.

OF OPTOMETRY interprets, records, predicts, explains and criticizes—optometry. But the AMERICAN JOURNAL OF OPTOMETRY's interpretation of optometry means more than just a review of ocular problems, refractive procedures and orthoptic techniques. We are keenly aware of these things and appreciate their importance in refractive work, but optometry—for better or worse—is an integral part of the health conserving activity of America. It plays an important role in safeguarding the visual needs of millions and millions of America's citizens and in so doing there is much action and drama. It is the job of the AMERICAN JOURNAL OF OPTOMETRY to interpret this union of social, economic, health and professional work. It is a large order, and with the help of excellent editorial assistants we are doing our best to fulfill our conception of this important journalistic assignment.

Such a program has considerable breadth, and it is not surprising that we at times seem to follow paths that lead us far afield. But invariably these paths will be found to return to the sphere of activity of the practicing optometrist and the contacts he makes as a professional man. The AMERICAN JOURNAL OF OPTOMETRY means refraction as it is practiced today and as it will be practiced tomorrow. Its destination is always the same—to make clear and coherent the technical and economic problems of the optometric world. When the AMERICAN JOURNAL OF OPTOMETRY was born 18 years ago, it was said that this was the most important optometric journalistic assignment in the profession's development. At this Christmas Season, 18 years later, in which we again offer our new as well as our old readers our most sincere season's greetings, we add with these the thought that we still believe in our work, and that we think our job in getting out this technical publication for optometrists is an assignment which will pay future optometric dividends of public service, as the profession continues to advance.

OCULISTS ENGAGE IN PUBLIC RELATIONS ACTIVITIES

During the past several years, the writer has followed with no little interest, the active program of eye conservation, as developed by certain sections of organized ophthalmology, to promote, to school teachers and social workers of America, these oculists vauntingly peculiar forms of specialized eye service. This well directed type of public relations activity has been more-or-less successfully carried out, by these organized oculists, under the guise of a quasi-lay organization known as the *National Soci-*

ety for the Prevention of Blindness. An organization with an annual budget, we are told, of $125,000* and a capable staff whose duty seems to be three fold, (1) the dissemination of oculists' propaganda to educators and social workers, (2) to develop state organizations to carry the oculists' message to all the public, and (3) to edit, publish and distribute a magazine called the SIGHT SAVING REVIEW. This semi-technical eye journal is devoted almost exclusively to praising the professional service rendered by oculists.

The efficient manner in which this piece of public relations activity is carried out, is brought out in part by the oculist Gradle,[1] who in discussing the organization of a state society for the prevention of blindness, says, "As to the make-up of a state organization, it must be dominated by civic-minded citizens of recognized ability. Of course ophthalmologists must participate actively in the technical direction of the work, but as the late Dr. Wilder pointed out, all executive ophthalmological participation must be behind the scenes and not directly before the public. The keynote of a well-functioning state society for the prevention of blindness is an efficient executive secretary. This must be a medically trained, well-rounded social worker with ability to contact all strata and to participate actively in obtaining necessary legislation. That secretary must be given adequate office help, capable of assuming the necessary mechanical work."

That this type of organization will function as directed from behind the scenes by these oculists, is evidenced in the following quotations taken at random from several issues of the propaganda disseminating SIGHT SAVING REVIEW. As the writer has already said, the following statements, all more or less half-truths, are published in the evident effort to mislead the public in the matter of judging the relative merits of the eye services performed by optometrists and oculists. This form of indicible medical propaganda is given wide distribution among lay persons.

For instance, Alvaro and Merrill,[2] in discussing strabismus claim that the "decision as to method of treatment required for each case of squint can be determined only by a skilled ophthalmologist. The fact cannot be overstressed, (they claim) that the most satisfactory visual

[1]Gradle, Harry S. Development of a prevention of blindness program from the standpoint of an ophthalmologist. Sight Saving Review. Vol. IX, No. 3, p. 206, 1939.

[2]Alvaro, M. E., and Merrill, E. B. The need and opportunities for prevention of blindness and for sight conservation. Sight Saving Review. Vol. X, No. 2, p. 93, 1940.

*1938 annual income, $126,500, according to J. M. Glenn, page 200, Sight Saving Review, Vol. X, No. 3, 1940.

results are obtained when the child with cross-eyes—no matter how young—is placed under the care of an ophthalmologist as soon as the defect is discovered." The fact that optometrists also treat squint is ignored.

Avirett[3] comments on visual surveys and points out that, "Snellen chart tests were given to over 1,000 children, of whom more than 700 were found to need watching for signs of eyestrain and more than 50 were found to need ophthalmological examinations. Fifteen were found to need immediate attention." The fact that 70 per cent of all necessary eye examinations made in America today are made by optometrists makes no difference to Avirett. These children, according to him, needed only examinations by oculists.

The oculist Berens[4] claims that, "by means of the ophthalmoscope the eye physician is able to examine the interior of the eye and thus often is the first to discover the evidence of serious diseases of the brain, the blood, the digestive tract, kidneys, heart, or arteries. This (he further claims) is an excellent reason for having the eyes examined periodically by an eye physician, that is, by one with the degree of M.D., who has had special training in diseases of the eyes." Berens fails to state, however, that optometrists, too, examine the interior of the eye with ophthalmoscopes, a thing they have been doing rather well for years.

Lighting is also touched upon by Alvaro and Merrill[5] who say, "He (the patient) will understand the importance of good lighting both at home and at work, and the desirability of wearing glasses when prescribed by an ophthalmologist." Even the field of protection glasses is used as an opportunity for propaganda. Town[6] claiming that, "in a survey which I have made of a representative group of ophthalmologists throughout the country, the results show unanimous agreement that sun glasses should be worn only in the bright sun. 50 per cent are of the opinion that they may be harmful if used otherwise. Furthermore, all the eye physicians agree that only ground and polished glasses should be worn." Again the splendid work that optometry has done in both of these fields is overlooked.

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[3]Avirett, J. W. Prevention of blindness as seen by a private agency. Sight Saving Review. Vol. IX, No. 3, p. 175, 1939.

[4]Berens, C. Modern Conception of conservation of vision. Sight Saving Review. Vol. IX, No. 2, page 119, 1939.

[5]Ibid. Page 99.

[6]Town, A. E. Sun Glasses. Sight Saving Review. Vol. X, No. 2, page 138, 1940.

Another evidence of this activity is found in the following sentence directed towards the teaching professions. Alvaro and Merrill[7] are again quoted in claiming that, "the alert teacher is in a strategic position to discover satisfactorily, developing eye habits or to collect evidence which may indicate the need for examination by an eye physician," and also, "the work of the sight-saving class is co-ordinated with that of the regular grade. That requiring close use of the eyes is done in the sight-saving class under the guidance of a teacher specially trained in this work; the amount of eye use permissible is prescribed by an ophthalmologist," while Berens[8] adds that, "children with reading difficulties should be examined by an eye physician for defective vision and especially for anomalies which prevent the proper co-ordination of the eyes."

This point is further commented upon by Page[9] who claims that, "in the first place, we found that through the education department the needs of the school children could be uncovered through an annual medical inspection and that we might expect an individual examination of the sight and hearing of public school children by both the teacher and the school nurse and an examination of vision alone by a competent ophthalmologist," and Alvaro and Merrill[10] add that, "reading difficulties which, according to statistics, occur in as many as 5,000,000 children in the United States alone, and where defective vision is almost always present to a smaller or larger extent, should enable the school teacher to spot the eye cases and have them duly examined by an ophthalmic surgeon."

Hardin[11] comments on the work of the state society for the prevention of blindness by saying, "we realized also that it would be necessary to limit eye examinations for our program to those doctors who restricted their practice to eyes, or eye, ear, nose and throat. You see, our state, (Washington) while not large in population, is large in geographical territory, so we do not have many professional men who could restrict their practice to eye work only—and still eat." Hardin forgets for the moment the fact that optometrists do restrict their practices to eye work and most of them eat rather well. However, Alger[12] puts the same

[7]Ibid. Page 94 and page 96.
[8]Ibid. Page 121.
[9]Page, H. O. Prevention of blindness as seen by an interdepartmental council. Sight Saving Review. Vol. IX, No. 3, page 187, 1939.
[10]Ibid. Page 94.
[11]Hardin, G. Prevention of blindness as seen by a social security administrator. Sight Saving Review. Vol. IX, No. 3, page 178, 1939.
[12]Alger, E. M. "Time marches on," in sight conservation. Sight Saving Review. Vol. X, No. 2, page 105, 1940.

thought forward when he claims that, "it (the public) still believes, as it did a hundred years ago, that any good druggist must be a fair doctor, and that anyone who sells glasses can examine eyes. It never can keep clear in its own mind the difference between optician and optometrist and oculist."

The duty of the local oculist, in this program of public relations, devised by them is reviewed by Hardin[13] who advocates, "a speaker's bureau made up largely of eye physicians who will talk to the children about eye conditions in mature life and urge them to be conscious of the need of their parents protecting their eyesight, is perhaps, a unique way to approach this problem. For years we have all talked to parents about the care of their children. Why not talk to children about the eye care of their parents?"

It is evident, therefore, that a scurrilous flank attack is being made upon optometry by certain oculists, who are using every phase of a well directed and ruthless public relations campaign to (1) discredit, in the eyes of the public, the excellent ocular work done by optometrists, and (2) to improve if possible the standing of their own specialty among the public at large.

In viewing this dross activity on the part of oculists, one is struck by the apparent indifference or inability of the leaders of certain optometric organizations to meet this issue, and to present optometry's side of the story. Most of these optometric leaders do not seem to recognize the fact that sooner or later they must face this mirksome issue and that this entire question must be dealt with as a professional problem.

And even among those leaders that do understand this, they seem to exhibit a strange kind of timidity about getting out and selling optometry to the public. Today optometry must tell the story of proper refractive work to the man on the street, not only as an eye conservation-public health project but also to preserve the splendid heritage of optometry itself. It's a big public relations job we have to do. The public has too long heard only one side of this story. There is a crying need for organized optometry to really move in this direction, and give the optometrists of America the unified service they have every right to expect.

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[13]Ibid. Page 183.

RECURRING XANTHELASMA THROUGH THREE SURGICAL INTERFERENCES

A patient, now in her early sixties, whose ocular problems have been under the care of the writer for the past fifteen years, presents an interesting lid complication which evidently has never been successfully overcome.

About 12 years ago this patient presented herself for a refraction with a history of needing additional help for near-point work. The only other complaint being the presence of a small yellowish growth of connective tissue with some fatty degeneration in the neighborhood of the inner angle of both upper lids. This growth had not been present at a previous examination made nearly three years before. A diagnosis of xanthelasma was made and arrangements completed for the surgical removal of both small masses.

On two later occasions the patient reports similar masses surgically removed and at a recent eye examination evidence of a recurrence of the condition was again made. The patient is now reluctant to undergo additional surgical care.

RIDGEWAY JOINS NEW JERSEY DEFENSE COUNCIL

The optometrist Ridgeway, of Trenton, New Jersey, has recently been appointed a member of the Health, Welfare and Recreation Committee of the New Jersey Defense Council. The appointment was made by Governor Moore of New Jersey. Earl H. Ridgeway is well known in ocular circles as secretary of the New Jersey Public Health Bureau. The new committee is expected to concern itself with industrial health surveys which are expected to assist in speeding up war time industrial production. The work of the committee will also deal with industrial accident prevention. The optometrist Ridgeway is also active in the Public Health Bureau of the American Optometric Association.

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OPTOMETRISTS AND WAR TIME FIRST-AID

Informed and trained observers are in general agreement that sometime between January and May, 1941, the United States of America will enter the war, taking her place beside Great Britain in this world wide conflict. In fact, for many months the United States has already stood as a silent ally, assisting our friends in England wherever possible in their conduct of this engagement to again preserve democracy. The entrance of the United States in this conflict as predicted by observers, will, we believe, cause no surprise inasmuch as our administration leaders have, for a growing period, shown a willingness to take this important and far-reaching step. Then, too, the results of the election in November 1940 will be accepted by them as a mandate from the people, admonishing them to further develop this course of action.

Optometry in common with other professions will be affected in many ways by the inevitable changes which war will bring to the lives

of all citizens. Men will be called to the colors, taxes will increase, materials of all kinds will be difficult to secure, business will be good, equipment will be hard to replace, inflation affecting our monetary values will develop, normal living routines will be upset, and there is also the possibility of actual attack from without. As members of a limited specialty, practicing in the general field of the healing arts, it is wise therefore for us to review the place optometrists must play in the event that these United States are attacked and that war itself is brought to our shores.

The younger optometrists will in time see active service with the military forces, but what of the practitioners who remain at home? What will be their duties in addition to preserving the visual efficiency of the civil population? What can they contribute to the general welfare of our country in those periods when the civil population is under fire from military attacks from without? To find the answer to this question one must turn to our fellow optometrists in England, Scotland and Wales, who for the past 16 months have been face to face with this very problem. For during this period, these courageous optometrists of Great Britain, in their villages, towns and cities have been repeatedly attacked from the air. They and their fellow citizens have been living in a strange world. A world of blackouts. A world of abrasions, cuts, bruises, wounds, burns and at times even the deleterious effects of poison gas. A world of death and pain. An island of courage surrounded by a sea of hate, and these optometrists have carried on, not only serving the public as refractionists but also rendering what first-aid assistance was possible until proper surgical and medical attention could be had.

And it is natural that this is so. During an air raid, for instance, the injured citizenry properly turn for help to those of their fellow citizens who were fortunate in coming through the attack unscathed. Thus in these critical moments of attack and in the immediate periods thereafter such help as can be rendered must and should be given to those who have been injured. In no sense can this immediate first-aid be construed to be the practicing of medicine. Each of these injured cases is placed under the care of a physician as soon as possible, yet in England it has been found necessary at times for optometrists to lend their assistance in this necessary humanitarian work. The physician Wyle[1] emphasizes this by pointing out that the majority of cases which pre-

[1] R. Wyle. Ocular First Aid. The Optician. (London, England) Vol. XCIX., No. 2567, p. 287. 1940.

sent themselves to optometrists for first-aid will, no doubt, be of minor character, but there will be other cases which will need medical attention. One point which should be understood by the optometrist is that he is rendering first-aid and not medical treatment.

The physician Challis[2] too, points out that in the event of air raids that individual optometrists will be called upon to attend to ocular injuries which need immediate attention. He adds that nothing should deter optometrists from applying more advanced treatment that can reasonably be expected from the ordinary first-aid worker whenever the urgency of the occasion seems to warrant such a course. He says, too, that it is even possible that the optometrists refracting room may become a local first-aid treatment center for eye casualties and optometrists should see to it that both they and their refracting rooms are well fitted for this important work.

With these facts before us as experienced by the optometrists of England and with the growing possibility of war within these United States, we will present in these columns during the next three months a brief review of the ocular first-aid procedures found necessary in England during the past year or so. These reviews are presented only to encourage optometrists of America to further acquaint themselves with first-aid techniques which may prove invaluable in times of attack, should these come. The first of these three papers will deal with *foreign bodies* and *abrasions*. The second with *burns* and the third with *poison gas*.

Carel C. Koch.

SPECIAL REPORTS

EYE DOMINANCY AND ANISEIKONIA*

W. B. Russell, Opt.D.
Altus, Oklahoma

Aniseikonia has been described as a difference in the size or shape of the retinal images of the two eyes. This condition gives rise to symptoms of headaches, nausea, dizziness and even vomiting. Unfortunately

[2] W. R. Challis. Treatment of Air Raid Casualties. The Optician. (London, England) Vol. XCIX, No. 2564, p. 245. 1940.

*Submitted for publication October 5, 1940.

the clinical application of discoveries on aniseikonia is difficult for the average optometrist and will continue to be difficult until a simplified technic is available for the measurement and correction of retinal image size differences.

In the attempt to determine a practical correction for the patient, it frequently happens that the optometrist disturbs the habitual dominance of one eye over the other. This results in the patient's complaint of nausea, headaches and vertigo, symptoms also found in aniseikonia. Apparently the symptoms originate from the same cause: The introduction of a size difference between the images of each eye.

It may be that the symptoms of aniseikonia are due to image incongruity with reference to eye dominance. This might partly explain why marked size differences in retinal images in certain cases fail to give rise to the usual symptoms of aniseikonia. Less speculative is the thought that when ocular dominance is disturbed by an over or an under-correction, symptoms of discomfort are to be expected and generally can be relieved by a modification of the correction.

The first requisite for the diagnosis and correction of these symptoms is a positive knowledge of the dominant eye. By that is meant the eye working the most to get equal vision or that eye receiving dominant impulses regardless of visual acuity. In some cases the cover test has been found to be unreliable. The hole-in-card method of testing eye dominancy too, does not appear practical in some questionable cases. The writer has improved an eye dominance test[1] developed originally by his father. This new technique seems to give very reliable determination of eye dominance and in other respects also might prove useful in screening out applicants for both naval and army air corps.

The symptoms of disturbed eye dominance are headaches, nervousness, dizzy spells, nausea and neuralgia of the neck and shoulders. Individually these symptoms may be caused by other conditions, but when a number of them are present together, they are, in the writer's judgment, very likely to be due to a disturbance of the eye dominance. Following the usual routine examination and when 20/20 visual acuity is barely reached, eye dominancy should be rechecked. If the maximal visual acuity of one eye is lower than that of the other, the dominant eye should be determined before the final visual acuity and correction

[1] To be presented to the profession at a later date.

of the poorer eye is decided upon. Then that visual acuity should be given which allows the dominant eye to continue its dominancy.

It is most likely that eye dominancy involves some difference in size between the images of each eye particularly in cases of anisometropia and the correction of this anisometropia may produce changes in the relative size difference between the two eyes for which the patient may be unable to compensate. If the eye dominancy of the patient is kept in mind during the period of working out the final correction to be prescribed and an over correction of plus or an under correction of minus is resorted to, the change in relative size difference of the retinal images is at least somewhat minimized and quite often is within the compensating ability of the patient.

Just as it is possible to secure comfort in certain cases of aniseikonia by the application of low lens powers such as plano in one eye, or +0.25 in the other, it is also possible to secure comfort by slight modification of the correction when the symptoms mentioned previously are present.

Until some better method is devised to provide a more accurate analysis of these cases it appears to the writer that maintaining the prevalent eye dominance in some cases to the sacrifice of visual acuity in the non-dominant eye is the best method available to secure a comfortable correction.

DR. W. B. RUSSELL
ALTUS, OKLAHOMA

ORGANIZATION AND JURISPRUDENCE

by Clarence W. Morris

A department in which some of the organization problems of Optometry will be discussed and in which certain of the legal aspects of refractive work will be reviewed.

A COUNTY MEDICAL SOCIETY ADOPTS PUBLIC RELATIONS

A description of some of the public relations activities of organized oculists on a national scale has been written by Koch.[1] A description of a county public relations program, which may be the prototype of an

[1] Page 557.

activity which may rapidly be extended to all the metropolitan areas, is the theme of this article. The first medical society to embark upon such an ambitious program is the Lake County Medical Society, of Indiana. The announcement of this venture is contained in THE LAKE COUNTY MEDICAL NEWS, September, 1940. In fact this edition is designated as the *Public Relations Number*.

The content of the magazine contains five articles, all dealing with some phase of public relations. These articles are written by different officers and members. All echo the same theme; namely, that Public Relations is the No. 1 Job of this medical society.

The first article is entitled, "We Take Our Stand," by Forster. He describes an organized attempt, by the New Deal in Washington, to socialize medicine and destroy the sanctity of the personal relationship between physician and patient. He cites an aggresive public relations program as the only practical method of combatting this trend toward socialization. We quote, page 5, "The people are awakening to the fact that they must look after their interests in the administration of medical care, and they are no longer in ignorance as to what should constitute good medical care. It is for us to supply it, first of all by organizing our efforts in seeing that the quality and character of our practice is beyond reproach, and second, by taking this product to the people by way of a dignified public relations approach that will convince them of our sincereity and ability in caring for their health needs."

Shanklin contributes an article entitled, "It's Up To You." The article cites the case of a president of a railroad who is reputed to have once made the remark, "The Public be Damned." Shanklin points out that the same railroad now is very much concerned with what the public thinks, and spends annually huge sums of money, creating better relations with the public. The writer applies this to his own medical group in the following words, page 7, "Now, to come to the real point, our Public Relations Counsel has presented, in this issue, a statement of fact: a plan which, if followed, will do more to advance the cause of Medicine hereabouts than all that has been done since our organization, in 1898."

On page 9 Howard calls attention to the article entitled, "Lake County's No. 1 Job, Public Relations," and asks that each member give his co-operation in this program. On page 12 Brandman stresses the point that the foundation of any public relations program must be the character and quality of the professional service rendered by the individual

practitioner. We quote, "To merit better relationship with the public, physicians will have to subject themselves continually to discipline, scrutiny and correction, so that they may render the very best. Otherwise, the whole of public relations dies right there and then, in the unsure thing of delusion and misrepresentation."

On page 11 the editor has an article entitled, "What They Say." which is a collection of quotations from physicians in reference to the proposed public relations program. We quote one such statement by Niblick, "The new organization of the Lake County Medical Society is responsible for the addition of well over $100,000 annually to the income of member physicians, but the projected program of public relations, outlined elsewhere in this issue is worth more to us than all of our activities, as a society combined. It sounds idealistic at first, but mature reflection and observation of what the same sort of program has done for industry will convince anyone that it is a most practical plan for increased security, for a better practice of medicine, and for profit, than has been presented to any county medical society."

We learn from these articles that the society has seven full-time employees in two offices. The director is an executive secretary; a layman by the name of Mr. Henry Waterson. Mr. Waterson is the Public Relations Counselor whose program is mentioned. It has been contended by some, that in other professions the public relations work has been done by members of the profession. Here we note that this specialized work is being done by a layman. We find the good old optometric custom of farming out these salaried jobs to members of the profession is not the way the medical profession works. Shanklin writes, page 7, *"True it is, that we organize and we reorganize but we call in laymen to conduct the business affairs of our Society."* The Lake County Medical Society has shown rare judgment. For the salary of an executive secretary, they get both an executive secretary *and* a public relations counselor.

The feature article of this public relations issue is entitled, "Lake County's Number 1 Job—Public Relations." The article begins with rather a lengthy discussion under the subtitle, "What Is Public Relations?" We will quote from this discussion:

"Today, everyone talks about public relations, yet few who use the words understand what they mean, and for this reason any definition must begin with a list of things the term does not mean. 'By some,' says Paul Garrett, Director of Public Relations for General Motors, 'it is used as a fancy name for common press agentry; by some as insidious propaganda to put something over. By others, it is used to mean something else, usually telling of the 'favorable' side of business. It is, of

course, none of these things. It is infinitely more. Put the two words together in a different way and you have 'relations with the public' . . .

"Public relations is not something that can be applied to a particular phase of a business—it is not an umbrella covering everything but touching nothing. It is rather a fundamental attitude of mind—a philosophy of management—which deliberately and with enlightened selfishness places the broad interests of the consumer first in every decision affecting the operation of the business. . . .

"Defined broadly, good relations with the consuming public is not something that one can achieve through publicity or through the activities of a particular department of the organization. Public relations is not a specialized activity like production, engineering, finance or sales. It is rather something that cuts through all of these as the theme for each. It is an operating philosophy that management must seek to apply in everything it does and says. It is the philosophy of doing things people like—and doing them the way they like. And remember this, the doing is more important than the saying. But the doing alone is not enough. . . .

"To enshrine this philosophy of management by public relations as the basic concept of the business; to see that it pervades the organization from top to bottom; to interpret with honesty the practices and precepts of the business in terms of benefits to others—lest business lose for the world the right through sound and ceaseless progress to serve humanity—that, as I see it, is industry's No. 1 job. That is 'Public Relations.' . . .

"Edward Bernays also emphasizes this broader concept of public relations when he advises the public relations counsel 'to shape the actions of his client so that they will gain the interest, the approval and acceptance of the public. . . . Every phase of the client's ideas, products or activities which may affect the public or in which the public may have an interest is part of the function of the public relations counsel. . . .' He continues that, 'It is futile to attempt to sell an idea or to prepare the ground for a product that is basically unsound.'

"After the public relations counsel has analyzed the client, Mr. Bernays says that, 'his next step is to analyze the public. He studies the groups that must be reached, the leaders through whom he may approach these groups . . .' and 'only after this double analysis has been made and the results correlated, has the time come for the next step, the formulation of policies governing the general practice, procedure, and habits of the client in all those aspects in which he comes in contact with the public. And only when these policies have been agreed upon is it time for the fourth step' which is, of course, the employment of the entire 'publicity family' to sell the modified or revised client to the public. Certainly this is a vastly different thing than the prevailing concept that makes public relations a fancy name for pure publicity or hack-writing press agentry. And it is a concept that is shared by all those whose success in public relations qualifies them to define the term.

"The Lake County Medical Society, having employed a public relations counselor to improve its relations with the public, has made the double analysis to which Bernays refers, and has accomplished many of the prerequisites to the final, and easiest step—the approach to the public."

Before the physician is presented to the public through the medium of publicity, the self analysis and correction of internal deficiencies must be carried out, we quote, page 16, "Two major objectives remain to be gained, however, before the 'client' can be considered to be sufficiently modified to appear well in the searchlight of publicity: First, relations within the profession, although vastly improved, must approach perfection before there can be good relations with the public. If, because of

competition, each physician were to tell his patients that another physician is bad, or incompetent, or insincere, or dishonest, then the public will have it on the authority of the medical profession that the profession is bad, incompetent, insincere, and dishonest. Paul Garrett says that the most obvious lesson any company can learn is that good relations outside grow from good relations inside. If there is any secret to success in building good public relations, it is that you must begin at home and work out.' The second item for consideration is the matter of placing the finances of the hospitals in such a shape that any question the public might ask could be answered satisfactorily."

The program has not yet approached the place at which publicity begins. Before publicity starts the Society plans to put all of its affairs in perfect order. The publicity will put dollars into the pockets of members of the Society. The objective of the publicity will be to sell the public on the merits of medical care. Obviously, too, some of this publicity will have a very direct effect upon other professions. We quote, page 17, "Increased income for the individual physician, through public relations for the group, is assured because the society will be able to advertise facts that prove a uniformily higher quality of medical care and maximum protection for the patient in case of serious illness. Herein lies the opportunity to halt the Hejira of patients to supposedly greener pastures in a neighboring metropolis. Herein lies the opportunity to compete, with a guarantee of success, with the advertising of quacks and fakes, cultists and unethical physicians."

The media by which this material may reach the public is very impressive. We quote, "The publicist merely breathes interest into his client's story, and adapts it to the various media included in the publicity family; news, advertising, magazine articles, motion pictures, radio broadcasts, photographs, public speeches, exhibits, books, reports, posters, meetings, brochures, special events, and so on. Certainly no business or tangible product offers the possibility for dramatization by the publicity man that is latent and within the organized medical profession, once our own public relations program reaches this final stage in its development."

This program is the first of its kind and the writer predicts that it will be widely copied and very soon a majority of the cities will see this type of public relations program placed in operation by the medical profession. Public relations matured as a scientific activity by the perfection

and adaptation of the "poll" technique as a "diagnostic" method in the conduct of a public relations program. The question that disturbs us is when will optometry "discover" public relations instead of trying first this and then that, so long as it is not genuine public relations. An effort in our optometric press has been made to sell optometry "publicity" in place of genuine "public relations." Others insist we must have another remedy, "Public Health Optometry." Publicity and Public Health Optometry will be excellent when put in their proper place in relation to a well integrated program of genuine public relations. But not until then.

When the optometric profession and its leaders catch the true vision of optometry, voluntarily through the self-discipline of a public relations program, eliminating all forms of commercial practice, they will substitute the more efficient and modern way of advancing the interests of individual practitioners by promoting the welfare of the profession as a group through a program of public relations. When we can get across the idea to all optometrists that the adoption of a program of public relations will be more effective in putting dollars into the pockets of the individual optometrists than individual competitive advertising and the practice of optometry in stores, then we will have put optometry in the proper condition to meet the new competitive forces which it must meet in the coming decade.

PROCEDURE AND INSTRUMENTATION

by Guy L. DuPlessis

A department wherein discussions will be carried on relative to the value of various experimental and clinical techniques as employed by practicing optometrists, and also in which the instruments used by optometrists in various phases of their work, will be subjected to some critical evaluation.

JENNINGS TEST OF COLOR BLINDNESS AND THE PSEUDO-ISOCHROMATIC PLATES

The wool color perception test designed by Jennings affords a means of self-recording the patient's color selections, as the test is carried out, and thus is a simple method of making a permanent record of the patient's ability to detect colors. However, from a practical stand-

point, the Jennings self-recording test for color blindness meets only gross and general color test requirements.

The test, itself, consists in matching a number of variously mounted colored skeins of wool yarn with two standard skeins of red and green. If gross errors are made in doing this, such as indicating violet or blue with red, or gray or light brown or reddish brown with green, evidence of color blindness is present. The test is faulty, however, inasmuch as it may be memorized in time, but still is of value as a quick but yet rough estimate of the general color sense of the patient.

On the other hand the new pseudo-isochromatic plates constitute a most refined method of color analysis. Certainly in all questionable cases these more delicate color tests, recently developed by the *American Optical Company* should be employed. These plates display figures made of colored dots or splotches which can be only identified by patients with known abnormalities in color vision or by others whose color perception is normal. These new plates present to the optometrist an easy method of making an exhaustive determination of the patient's color vision.

THE CATARACT MINIMIZING LENS

The correction of aphakia in one eye when the other eye has some fair degree of visual acuity presents a problem of retinal image size difference making the wearing of such a correction practically intolerable. The average cataract lens introduces a retinal size image difference of approximately 25 per cent, thus making fusion impossible. When the correction is not worn, this size difference is not present, but because of the blur of the image, fusion is still lacking. To make fusion possible in unilateral aphakia, it is necessary to reduce the retinal image size which results from the use of the cataract lens by an amount which will make fusion possible.

Bausch and Lomb Optical Company has developed a new cataract minifying lens designed to assist in making this possible. This new cataract lens consists of a Galilean telescope in a translucent colorless plastic mount. The optical system is reversed to produce a minifying effect. A large high minus lens forms the objective in the plane of the frame eyewire; a strong, but smaller plus lens forms the ocular nearer the eye. The correction is ground in the second side of the ocular at the local laboratory. For near work, a fitover incorporating the addition is used. The device,

because of its construction, is not overly conspicuous, and weighs about the same as an ordinary cataract lens of the same power.

There is some question that all cases of monocular aphakia will accept such a correction comfortably. Assuming that the vision in the good eye is of practical use, as long as a 25 per cent difference in the size of the images exists, no attempt at fusion is made and the blurred image is quickly suppressed. When this size difference is corrected by a minimizing lens, the correction is apt to be approximate, and the slight size difference remaining may give rise to aniseikonic symptoms. Besides, fusion is possible only in the straight ahead or primary position of regard because of the Galilean telescope construction. It thus appears that such a minimizing lens, while of considerable value, can only produce a relative improvement in the binocular efficiency of the patient and must not be expected to provide normal binocular function regardless of the visual acuity in both the normal and the aphakic eye.

VISUAL STANDARDS UNDER UNITED STATES MILITARY SELECTIVE SERVICE

"The registrant for military service must be able to see well: have comparatively good hearing; be intelligent enough to understand and execute military maneuvers, obey commands and protect himself; and be able to transport himself as the exigencies of military life may demand." Examining physicians will accordingly construe these standards that the objective stated above may be realized.

The registrant will be classified in one of three groups: Class 1-A, for general military service; class 1-B, for limited military service; class 4, rejected for any military service.

Vision is to be taken with the registrant's back to a window and eyes twenty feet from a test chart. The vision of each eye is taken while the other is covered with a card. The eye requirements are as follows:

Class 1-A. (a) Normal Vision. (b) No less than 20/100 in each eye, if correctable to 20/40 with both eyes. (c) Post-operative scars if vision does not fall below above standards. (d) Slight nystagmus. (e) Slight conjunctivitis. (f) Simple chronic conjunctivitis in regions free from trachoma, and if amendable to treatment. (g) Slight adhesions of lids to eyeballs. (h) Small pterygiums. (i) Strabismus not interfering

with vision as above. (k) Color blindness. (1) Exophthalmos without hyperthyroidism.

Class 1-B. (a) 20/400 in each eye without glasses if correctable to 20/40 in either eye. (b) Loss of one eye or blindness in one eye not due to organic change, vision in other eye not less than 20/200 correctable to not less than 20/40. (c) Superficial corneal ulcer, acceptance deferred until healed without disqualifying impairment of vision. (d) The following conditions if mild: Chronic non-trachomatous conjunctivitis, entropion, ectropion, ptosis interfering with vision, trichiasis, epiphora, chronic blepharitis, extensive pterygium, chronic dacryocystitis, blepharospasm, mild diplopia because of paralytic squint.

Class 4. (a) Vision less than required for 1-A or 1-B. (b) Disfiguring scars of the eyes. (c) Lagophthalmos if associated with hyperthyroidism. (d) Pronounced exophthalmos. (e) Chronic keratitis. (f) Chronic recurrent inflammatory disease of the globe. (g) Deep chronic ulcer of the cornea. (h) Any active disease of the retina, choroid or optic nerve. (i) Detachment of the retina. (j) Marked nystagmus. (k) Glaucoma. (l) Marked diplopia due to paralysis. (m) Abnormal eye conditions due to brain disease. (n) Trachoma.

Type of malingerers: (a) Real malingerers, who wilfully attempt to deceive to escape military service. (b) Psychoneurotics, who are not fully conscious of malingering, but who can be made to realize their offense. (c) Confirmed psychoneurotics, who are beyond redress. In feigned diseases of the eyes and ears, special tests are required for detection of malingerers. These tests are provided for the physicians of the examining boards, together with instructions in retinoscopy.

BOOK NOTICES

CREDIT AND COLLECTION PSYCHOLOGY FOR PROFESSIONAL MEN. Harris Gruman, O.D. Published by the Telegraph Press. Cameron and Kelker Streets. Harrisburg, Pa. 64 pages, illustrated. $5.50. 1940.

The well-known optometrist, Gruman, in this monograph, presents to his fellow practitioners a series of tried and true business-building practices for the professional optometrist. The book deals with proper

methods of handling the credit question, giving in detail, each step of a routine which will please both the patient and the doctor. Gruman then covers the entire collection problem as faced by optometrists.

Dr. Harris Gruman is a graduate of the Pennsylvania State College of Optometry and also the Wharton School of Finance and Commerce, University of Pennsylvania. He has been in successful practice for nearly twenty years, and the many worthwhile ideas presented to optometry in this book are the fruit of his splendid training and his excellent professional judgment.

The book presents professional optometrists with the needed methods of successfully combatting many of the activities of commercial men. $5.50 invested in this book, filled as it is with workable business practices for professional optometrists, will pay dividends to any professional man. For convenience, optometrists who wish to do so, may order this work direct from the AMERICAN JOURNAL OF OPTOMETRY. Checks should be sent with order.

C. C. K.

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This is an index covering all of the departments of the AMERICAN JOURNAL OF OPTOMETRY. The letters used to explain in which department the material indexed appears are as follows: (OP), Original paper; (CC), Current Comments by Carel C. Koch; (E), Editorial; (PI), Procedure and Instrumentation by G. L. DuPlessis; (OJ), Organization and Jurisprudence by Clarence W. Morris; (SR), Special Reports; (C), Correspondence; (Ab), Abstracts; (I), Information and Explanatory Notes; and (BN), Book Notices.

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